(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 18 August 2005 (18.08.2005)

PCT

(10) International Publication Number WO 2005/076409 A1

(51) International Patent Classification⁷: 1/38, 9/40, 1/22, G06F 1/16

H01Q 21/30,

(21) International Application Number:

PCT/EP2005/000879

(22) International Filing Date: 28 January 2005 (28.01.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/540,448

30 January 2004 (30.01.2004) Us

- (71) Applicant (for all designated States except US): FRAC-TUS S.A. [ES/ES]; Avda. Alcalde Barnils 64-68, Edificio Testa - Modulo C3, Parque Empresarial Sant Joan, Sant Cugat del Valles, E-08190 Barcelona (ES).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SOLER CASTANNY, Jordi [ES/ES]; Fray Luis de León, 19-21 àtic, E-08302 Mataró (ES). PUENTE BALIARDA, Carles [ES/ES]; Londres, 57 4° 2a, E-08036 Barcelona (ES). BORJA BORAU, Carmen [ES/ES]; Tvra. de Dalt, 67, E-08024 Barcelona (ES).

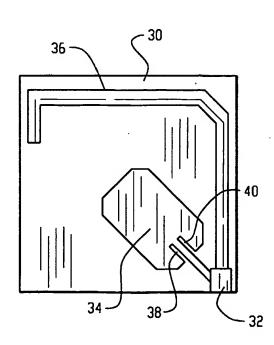
- (74) Agent: BRACHMANN, Roland; Jones Day, Rechtsanwälte Attorneys-at-Law, Prinzregentenstrasse 11, 80538 München (DE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MULTI-BAND MONOPOLE ANTENNAS FOR MOBILE NETWORK COMMUNICATIONS DEVICES



(57) Abstract: Multiband monopole antennas are disclosed. The antennas disclosed can include a substrate for mounting conductors, one or more conductors for receiving networking signals mainly in a first frequency band, and one or more conductors for receiving networking signals mainly in a second frequency band. The conductors can have a polygonal shape or the conductors can have a linear, space-filling, or grid dimension shape. The conductors can be connected at a feed point. One or more antenna can be incorporated into a single printed circuit board. When multiple antennas are used with the same printed circuit board, the conducting material of the printed circuit board located between the antenna attachment points can be interrupted to improve the isolation of each antenna.